

ABSTRACT OF THE DISCLOSURE

5 A method of treating vulnerable plaque comprising intentionally
damaging or rupturing the vulnerable plaque using a wingless balloon which is
inflated from a wingless unexpanded diameter to a limited expanded
diameter. This process produces significant increase in ECM synthesis at the
10 site of the damage or rupture. As a result, the method strengthens the
vulnerable plaque while minimizing or avoiding damage to the surrounding
wall of the body lumen or damaging a stable plaque mistakenly believed to be
a vulnerable plaque. The method of the invention is particularly useful in
treating a fibroatheroma type of vulnerable plaque. In one embodiment, the
balloon is self-limiting such that it expands compliantly at initial inflation
pressures, and above nominal pressure it expands noncompliantly. In an
alternative embodiment, the balloon is inflated using a diameter-limiting
device, such as a device which limits the inflation pressure or the volume of
15 inflation fluid in the balloon.

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